

## Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



## ***A BRIEF OVERVIEW OF THE UNITED STATES' GRAPE INDUSTRY***



REPRINTED FROM THE FRUIT SITUATION • SEPTEMBER 1975

## A BRIEF OVERVIEW OF THE UNITED STATES' GRAPE INDUSTRY

by  
John L. Baritelle and Raymond J. Folwell\*

**ABSTRACT:** The United States grape industry is undergoing rapid changes. This article reviews some of the major events of the past few years which have had a major impact on the grape industry. The apparent increase in demand, particularly for wine, during the late 1960's and early 1970's, coupled with several short crop years, led to higher grape prices. The industry responded with expanded acreage. With favorable weather the U.S. grape industry is capable of producing unprecedented larger crops, although new plantings will be severely curtailed. While prices received by growers for grapes will undoubtedly be below those of recent years, consumers in the years ahead should find ample supplies of wine, raisins, fresh table grapes and other grape products.

**Key Words:** Concord grapes, consumptions, demand, grapes, juice, planting response, production, raisin grapes, supply, table grapes, wine grapes.

The grape has become one of the Nation's most important fruit crops. The value of grape production exceeded that of apples by 1969 and in 1973 the value of the grape crop surpassed that of oranges the leading fruit crop. The 1974 grape crop was valued at \$609.7 million, slightly less than the value of the 1974 orange crop (Table 1).

The U.S. grape industry is undergoing dramatic changes. While per capita consumption of fresh table grapes and raisins trended downward until the early 1970's, per capita wine consumption increased dramatically from 1.03 to 1.65 gallons during the so-called "wine boom" years, 1967 through

1973 (Table 2). In recent years per capita consumption of fresh table grapes, raisins, and some processed grape products such as juice has stabilized and appears to be on the increase.

Interest in grape production and corresponding expansion of grape acreage at unprecedented rates during the past 5 years has given the industry an enormous potential for increased production.

The 1975 crop could prove to be one of the larger on record. This article reviews the historical background leading to the present circumstances and acreage situation in the grape industry and emphasizes the most important market outlet for grapes, the wine market.

Table 1—Value of production leading fruit crops

Year	Apples	Grapes	Oranges
	Million dollars	Million dollars	Million dollars
1974 <sup>1</sup>	537.6	609.7	611.6
1973	545.7	680.1	603.3
1972	377.7	423.1	549.4
1971	299.1	381.6	465.1
1970	283.3	296.2	388.0
1969	272.3	282.4	447.0
1968	332.7	236.4	383.8
1967	300.9	212.3	337.3
1966	252.6	207.7	335.9
1965	259.1	195.1	367.3

<sup>1</sup> Preliminary.

Source: Statistical Reporting Service, U.S. Department of Agriculture, *Crop Values*, various issues.

### Production and Utilization of the 1974 Grape Crop

Grapes are commercially important in at least a dozen States (Table 3). California in 1974 produced about 90 percent of the Nation's 4.2 million tons of grapes. New York was a distant second with 177,000 tons of principally Concord and other

\*Respectively, Agricultural Economist, Commodity Economics Division, Economic Research Service, USDA; and Associated Professor of Agricultural Economics, Department of Agricultural Economics, Washington State University, Pullman, Washington 99163.

Table 2—U.S. per capita consumption of grapes and grape products

Year	Fresh grapes	Raisins	Canned grape juice	Wine
	Pounds	Pounds <sup>1</sup>	Pounds <sup>1</sup>	Gallons <sup>2</sup>
1974 <sup>3</sup> .....	2.7	1.55	.67	1.65
1973 .....	2.1	1.40	.56	1.65
1972 .....	1.8	.96	.54	1.61
1971 .....	2.1	1.35	.70	1.48
1970 .....	2.5	1.34	.58	1.31
1969 .....	3.1	1.47	.54	1.17
1968 .....	3.4	1.44	.55	1.07
1967 .....	3.1	1.52	.67	1.03
1966 .....	3.8	1.64	.63	.98
1965 .....	3.9	1.54	.74	.98

<sup>1</sup> Product weight basis. <sup>2</sup> For resident population of all ages.

<sup>3</sup> Preliminary.

Source: Economic Research Service, U.S. Department of Agriculture, *Fruit Situation*, July 1975. Wine Institute, *Economic Research Report*, San Francisco, various issues for wine per capita series.

American type varieties. Washington, Pennsylvania, and Michigan also have sizable production of Concord and other American varieties. In addition, the newer plantings of French hybrid types for wine are now bearing larger crops.

Grapes are a highly versatile crop. The Concord's primary use is juice and jellies. However, during the so-called "wine boom" years of the early 1970's, significant tonnages of ConCORDS went into the making of wine. In 1974, 46 percent of the Concord grapes purchased by New York wineries and processing plants went into wine with the remainder going into juice or jelly. Some observers note that in some recent years at least 20 percent of

Washington's Concord crop was sent to California for use in the so-called "pop wines."

The principal raisin type grape is the Thompson Seedless variety produced in California.<sup>1</sup> The Thompson is well suited for the making of wine and raisins, as well as being a desirable table grape. Over the last 15 years at least one-third of the Thompson tonnage was crushed for wine. In recent years when there was a shortage of wine type grapes, over one-half of the raisin type grape tonnage went for wine. In 1973, 46 percent of the Thompson tonnage was crushed for wine. In 1974 when the tonnage of wine type grape varieties was larger, 38 percent of the California raisin type grape crop was crushed for wine, and accounted for one-third of the total grapes crushed for wine in California. Nearly 7 percent of the raisin type grape crop went into the fresh market, 3 percent were canned, and 52 percent were dried for raisins.

Although a few of California's table grapes are dried, most are either crushed for wine or sold as fresh table grapes. In 1974 over one-half of the production of table grapes was crushed for wine. As with the raisin grapes, fresh table grapes have some degree of substitutability for wine type grapes. Raisin and table grapes are substituted for wine type grapes when the production of wine type grapes is low relative to the production of fresh table grapes and raisins.

Wine grapes are principally grown for the production of wine, although some wine grapes go into

<sup>1</sup>Ninety-three percent of the raisin type grape acreage is Thompson Seedless.

Table 3—Production and utilization of grapes, by States, 1974; indicated production, 1975

State	Utilized production	Utilization <sup>1</sup>					Indicated production 1975 <sup>2</sup>
		Fresh	Canned	Dried	Crushed for		
					Wine	Juice, jam jelly	
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
Arizona . . . . .	12.5	12.5					12.3
Arkansas . . . . .	8.0	4			4	4	10.5
California, all . . . . .	3,789.0	432.4	61.2	1,017.4	2,278.0		3,850.0
Wine . . . . .	1,214.0	54.0			1,160.0		1,350.0
Table . . . . .	617.0	248.8		2.2	366.0		500.0
Raisin . . . . .	1,958.0	129.6	61.2	1,015.2	752.0		2,000.0
Michigan . . . . .	47.5	2.0			5.5	40.0	65.0
Missouri . . . . .	1.5	4			4	4	4.0
New Jersey . . . . .	1.0	.1			.9		.9
New York . . . . .	177.0	1.9			88.6	86.5	155.0
North Carolina . . . . .	3.1	4			4	4	3.3
Ohio . . . . .	15.5	1.2			2.8	11.5	18.0
Pennsylvania . . . . .	53.0	1.3			8.5	43.2	47.0
Washington . . . . .	80.5	1.0			4	4	110.0
Other <sup>3</sup> . . . . .	5.5	2.5			12.8	82.3	6.7
U.S. . . . .	4,194.1	454.9	61.2	1,017.4	2,397.0	263.6	4,282.7

<sup>1</sup> Preliminary. <sup>2</sup> As of August 1975, U.S. Department of Agriculture, Statistical Reporting Service. <sup>3</sup> South Carolina and Georgia. <sup>4</sup> Missing data included in other States to avoid disclosure of individual operations.

Source: Statistical Reporting Service, U.S. Department of Agriculture, *Noncitrus Fruits and Nuts Annual Report*, Jan. 1975.



the fresh market. California's wine grapes are generally less versatile for marketing purposes than the other two basic types of grapes.

Well over one-half of all grapes produced throughout the United States in 1974 went into the production of wine.

### Forecast Production

This year's U.S. grape crop is forecast to be one of the larger on record. California, the principal grape producer, is expected to have a 1.6 percent increase in total production (Table 3). Only table grapes show a decline from the previous year. Raisin grapes show an expected increase of 42,000 tons over 1974 while wine type grapes are expected to increase 136,000 tons in 1975. The substantial increase in wine type grapes can be attributed in part to the vast plantings of the early 1970's. Generally favorable weather coupled with a tendency to alternate-year bearing indicates a large Thompson Seedless crop in 1975.

The crops of Washington, Michigan, and Ohio also show increase over their 1974 production levels. Washington and Michigan are forecast at 110,000 and 65,000 tons respectively, up 37 percent from 1974 for both of them. Ohio is expected to have a crop of 18,000 tons, 16 percent above a year ago. However, New York's production at 155,000 tons is expected to be down 12 percent from a year ago, and prospects in Pennsylvania are for a crop of 47,000 tons, slightly more than one-tenth below year-earlier levels.

### The Shift in Demand

The important factors leading to this year's forecast of a large grape crop can first be traced to 1969 when there was an apparent shift in the demand for wine. While the per capita consumption of fresh table grapes, raisins, and canned grape juice had stagnated, the demand for wine increased in a phenomenal fashion. Wine consumption has gained increased acceptance in the U.S. in recent years. Historically wine consumption grew at modest rates. However, a dramatic surge in con-

sumption from 1969 through 1973 boosted per capita wine consumption by 60 percent. This growth took place despite rising price levels. Total gallons of wine entering distribution channels increased from about 213 million gallons in 1968 to almost 337 million gallons in 1972 (Table 4). In 1974 the total entering distribution channels was nearly 350 million gallons. This widely publicized increase in wine consumption caused a wave of optimism in the grape industry.

As of 1969 major vintners in the U.S. believed that the U.S. wine market would not reach 350 million gallons until 1980.<sup>2</sup> A prominent California financial institution was slightly more optimistic, forecasting a 350 million gallon market by 1977 and a 650 million gallon wine market by 1980.<sup>3</sup> Another California financial institution in 1972 forecast the U.S. wine market would increase to 490 million gallons by 1980.<sup>4</sup> One reason for the optimism is that present U.S. per capita consumption of 1.65 gallons per year is rather meager when compared to the per capita consumption of certain Western European countries.

The rather sudden increase in the demand for wine has been attributed to a number of factors: increasing numbers of college educated people, increasing numbers of people of legal drinking age, a rising level of general affluence, higher income, increased travel abroad and in the wine producing States by U.S. citizens, and availability of new wine type products.<sup>5</sup> For whatever the reasons, in the early 1970's America's tastes and preferences made a definite and dramatic change toward increased consumption of wine.

<sup>2</sup>"1972 Wine Sales: 337 Million Gallons," *Wines and Vines*, April 1973, p. 21.

<sup>3</sup>"World's Largest Bank Sees 650-Million-Gallon Market for Wine in U.S. by 1980," *Wines and Vines*, September 1973, pp. 21-24.

<sup>4</sup>"1980 Wine Market: 490 Million Gallons?" *Wines and Vines*, November 1972, p. 18.

<sup>5</sup>Folwell, R.J., et al., "Wine Marketing: Socioeconomic Characteristics and Consumption Patterns," Washington Agricultural Experiment Station Bulletin 769, December 1972.

Table 4—Commercially produced wine entering distribution channels in the United States, by type, for selected years

Wine type	1960	1964	1968	1972	1973	1974
	1,000 gallons	1,000 gallons	1,000 gallons	1,000 gallons	1,000 gallons	1,000 gallons
Table .....	53,071	70,349	95,831	173,820	191,252	198,941
Dessert .....	87,412	85,564	79,835	72,688	69,285	66,723
Vermouth .....	7,109	8,879	9,952	10,055	10,214	9,849
Sparkling .....	4,321	6,543	12,513	22,301	20,953	19,811
Other .....	11,440	14,289	15,526	58,121	55,536	54,079
Total .....	163,352	185,625	213,658	336,985	347,213	349,403

Source: Wine Institute, *Economic Research Report*, San Francisco, various issues.

The per capita use of fresh table grapes, raisins, and canned grape juice has stabilized in recent years after a long downward trend, and preliminary data for 1974 and indications for coming years show they may be on the increase. Perhaps because of increased availability and/or changing preferences, Americans may be showing more favor toward the grape and its products.

### <sup>1</sup>The Short Crop Years

At the same time demand for wine was increasing and markets for wine products expanding, there were several years of short crops due to unfavorable weather. The crop of 1970 was only 3.1 million tons, down from the preceding year's crop of 3.9 million tons, but the 1972 crop was a mere 2.6 million tons (Table 5). The combination of reduced supplies along with increased demand pushed prices received by growers, particularly in California, to record highs in the early 1970's (Table 6).

### Sustained High Prices Mean New Acreage

The high prices and favorable publicity about the increase in demand for grapes and grape products led to a general wave of optimism about the future of the wine industry. The response by the industry was overwhelming.

California, which produces most of the Nation's grapes, increased its plantings tenfold between 1968 and 1973—from 6,130 acres to more than 67,000 acres in 1973 (Table 7). Last year California growers planted an additional 30,000 acres and grower intentions indicate about 9,000 acres more will be planted in 1975.<sup>6</sup> The majority of these plantings were of wine type grapes. Some industry

<sup>6</sup>Moulton, Kirby, "An Economist Reviews California's Critical Grape Survey Situation," *Wines and Vines*, 56, May 1975, p. 32.

Table 5—Production and utilization of grapes, United States, 1965-74

Year	Utilized production	Utilization <sup>1</sup>			
		Fresh	Processed		
			Canned	Dried	Crushed for wine, juice, etc.
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
1974 <sup>2</sup> ..	4,194.1	454.9	61.2	1,017.4	2,660.6
1973 ...	4,193.2	400.6	59.0	969.3	2,764.2
1972 ...	2,569.7	349.6	50.5	437.4	1,732.2
1971 ...	3,996.7	409.9	58.4	880.9	2,647.5
1970 ...	3,119.3	406.0	53.7	821.8	1,837.8
1969 ...	3,897.5	562.0	66.3	1,010.2	2,259.0
1968 ...	3,549.0	558.0	64.0	1,111.1	1,816.0
1967 ...	3,062.2	466.8	54.0	751.8	1,789.6
1966 ...	3,733.3	597.4	62.0	1,185.7	1,888.3
1965 ...	4,326.0	599.6	54.8	1,297.0	2,374.6

<sup>1</sup> May not sum to total due to rounding. <sup>2</sup> Preliminary.

Source: Statistical Reporting Service, U.S. Department of Agriculture, Noncitrus Fruits and Nuts Annual Report, various issues.

observers wondered when this expansion would stop.

### 1975 and Beyond

Acreage expansion for 1975 and the foreseeable future appears to be limited according to statistical models developed to predict grape plantings for the major grape producing States.<sup>7</sup> The models for California wine type grapes and raisin type grapes relate plantings to past prices and certain other variables. Projections based on the models indicate that by 1976 plantings for both wine type grapes

<sup>7</sup>Baritelle, J.L. and H. Shapouri, "Supply Response of the U.S. Grape Industry," Economic Research Service Manuscript (In Review), 1975.

Table 6—Average grape price per ton received by growers for selected States.

Year	California			New York All	Washington All	Pennsylvania All	Michigan All
	Wine	Raisin	Table				
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
1974 <sup>1</sup> .....	146.00	132.00	135.00	235.00	165.00	198.00	183.00
1973 .....	207.00	133.00	174.00	221.00	185.00	221.00	197.00
1972 .....	222.00	125.00	198.00	186.00	154.00	172.00	166.00
1971 .....	139.00	69.00	95.10	160.00	126.00	123.00	120.00
1970 .....	118.00	72.50	109.00	169.00	157.00	147.00	142.00
1969 .....	80.50	62.50	56.70	175.00	115.00	161.00	145.00
1968 .....	71.10	58.20	55.80	133.00	91.50	135.00	124.00
1967 .....	62.10	63.50	61.90	112.00	82.00	109.00	114.00
1966 .....	56.40	47.90	51.30	116.00	77.00	109.00	106.00
1965 .....	48.30	37.80	32.40	111.00	95.80	131.00	102.00

<sup>1</sup> Preliminary.

Source: Statistical Reporting Service, U.S. Department of Agriculture, Noncitrus Fruits and Nuts Annual Report, various issues.

Table 7—All grapes: acreage standing, by type, by year planted, California, 1974.

Type	1965 and earlier	1966	1967	1968	1969	1970	1971	1972	1973	1974 <sup>1</sup>	Bearing Acres	Non- bearing <sup>2</sup> Acres	Total Acres
Raisin .....	228,057	4,442	1,559	980	1,439	1,533	2,778	2,817	5,735	1,720	240,828	10,272	251,100
Table .....	61,517	1,309	913	655	551	577	1,376	1,894	3,180	865	66,898	5,939	72,837
Wine .....	109,596	6,898	4,118	4,482	7,064	15,066	34,616	56,829	57,385	25,990	181,840	140,204	322,044
Grapes excl. rootstock .....	339,170	12,649	6,630	6,117	9,054	17,176	38,770	61,540	66,300	28,575	489,566	156,415	645,981
Rootstock .....	23	10	3	13	48	57	152	421	759	1,360			2,846
All grapes .....	399,193	12,659	6,633	6,130	9,102	17,233	38,922	61,961	67,059	29,935			648,827

<sup>1</sup>Includes 337 acres not yet planted when surveyed but expected to be planted before January 1, 1975. By type this 337 acres is comprised of the following: raisin—13, wine—324. <sup>2</sup>Non-bearing includes plantings in 1972, 1973, and 1974.

Source: California Grape Acreage 1974. California Crop and Livestock Reporting Service, 1974.



and raisin type grapes will be below that required to maintain present acreage levels.

The models for New York, Washington, and Pennsylvania used a proxy variable, a moving 5-year average of production, in lieu of planted acres because of a lack of data on annual plantings. Related the 5-year average of production to prices at least 3 years in the past indicated a slight increase in New York's grape acreage. This should mean increased production in the next few years. Similar increases were projected for Pennsylvania and Washington. Washington, according to the model, showed the greatest expansion of the three States producing principally Concord and American type grape.

Although further acreage expansion will be limited, recently planted acreage will continue to come into production over the next few years. Given favorable weather, large supplies of all grapes should be forthcoming, particularly in California. Under average conditions California alone will have in excess of 4,200,000 tons of grapes by 1978.<sup>8</sup> Raisin type grapes are projected near their 1974 crop levels with table grapes showing a decline in production. Wine type grapes, however, are projected at nearly 50 percent more than their 1974 levels by 1978 and production could be even greater with favorable weather conditions.

The disposition and utilization of the crop will depend on a number of factors. Inventories of wine have been growing faster than the demand for wine. The inventory of wine grew by 20 percent between 1972 and 1973 to 430.8 million gallons (Table 8). That was a record level, but the 1974 inventory

yields.<sup>9</sup> The 61,961 acres planted in 1972 are scheduled to come into production in 1975. Similarly, the 67,059 acres of wine grapes in 1973 will come into production in 1976. The projected 54,000 new bearing acres of wine grapes in 1975 translates into 300,000 tons of grapes which in turn could result in 53 million gallons of wine.<sup>10</sup> Cooperage expansion is on the order of 20 million gallons. If inventories are not reduced and the percentage of grapes crushed is not adjusted, storage would be short by 30 million gallons.<sup>11</sup>

The future of the grape industry will depend in a large part on the continued expansion of the wine market. Per capita consumption of wine in 1974 was about the same as 1973's per capita consumption of 1.65 gallons. Will this figure increase in the next few years? To answer this and other questions, the Economic Research Service has undertaken a household survey to better understand those buying and not buying wine and wine type products. A panel approximately 7,000 households representing a cross section of all U.S. households are being asked to keep a monthly diary of their wine purchases.

The findings thus far indicate that most U.S. households do not buy or consume wine. For the 4-month period November 1974 through January 1975, over one-half of the panel households didn't buy any wine or wine type products. The highest incidence of purchase was in or around large urban areas. Almost 60 percent of those households made at least one or more purchases. In contrast, less than 30 percent of those panel households living in markets with less than 50,000 persons purchased wine.

By region of the country, the Pacific Coast had the highest incidence of purchase with 63 percent of the households making at least one purchase. New England and the Middle Atlantic States had an incidence of purchase of about 57 percent. The important wine markets are generally on or close to the East or West Coast and are in or around the major metropolitan areas.

Members of the typical wine buying household were better educated with higher incomes than those in the non-wine buying households. In addition, the husbands of wine purchasing households usually hold white collar jobs in comparison to nonpurchasing households where blue collar occupations dominate. Wine purchasing households were divided into 10 groups with each group representing 10 percent of the purchasing households. Before the households were placed into various groups, they were arrayed according to households purchasing the largest quantity down to house-

Table 8—Inventories of wine by type in the United States as of December 31, 1968-74

Wine type	1968	1972	1973	1974
	1,000 gallons	1,000 gallons	1,000 gallons	1,000 gallons
Table .....	147,859	255,219	321,255	354,206
Dessert .....	116,558	86,954	92,337	89,571
Vermouth .....	1,490	1,418	1,185	1,163
Sparkling .....	5,257	8,061	8,464	8,110
Other .....	2,372	7,320	7,602	6,660
Total .....	273,536	358,972	430,843	459,710

Source: Wine Institute, *Economic Research Report*, San Francisco, various issues.

was 459.7 million gallons or 6.4 percent greater than 1973.

Expansion of cooperage, storage tanks or barrels, is probably below that necessary to accommodate the additional new acreage with normal crop

<sup>8</sup>Moulton, op. cit.

<sup>9</sup>Ibid.

<sup>10</sup>Ibid.

<sup>11</sup>Ibid.

holds purchasing the smallest quantity of wine during the 4-month period. Hence, group 1 included the 10 percent of those households which purchased the largest quantity of wine. Almost one-half of all the wine bought in the 4-month period was purchased by only 10 percent of the purchasing households. Over two-thirds of the wine was bought by the top two groups. The sale of wine in the United States is made to a very few households. Most households never purchase wine and most of those which do buy wine purchase a relatively small proportion of the total wine sold.

The importance of wine at festive occasions was evident as over 35 percent of the purchases were intended for special occasions, particularly among households purchasing very little wine. The more wine entering a household, the greater the percent to be used for everyday consumption.

According to the data for the 4-month period, the housewife was the most frequent intended user, expecting to participate in the consumption of 80 percent of the purchases. The husband was to participate in the consumption of 75 percent of the purchases. Friends and relatives were also marked high percentage users.

There was also a good deal of seasonality in the purchase of wine. In December better than one-third of all households on the panel bought wine. About one-fourth of the households made at least one purchase in October and November, but only 17 percent made a purchase in January.

The market potential of wine in the United States would appear vast on two accounts: first, the large percentage of the population not buying; and second, of those presently purchasing, a large percent purchase very little in comparison to the small percentage who apparently consume a majority of the wine.

Assuming an average yield per acre and a gradually improving economic situation, the following events seem plausible. With employment and incomes increasing, as well as plentiful supplies of grapes, per capita wine consumption should once again increase. The rate of increase will probably be at a more modest rate than that of the early 1970's. The rate of expansion will likely depend on such things as wine prices, household income, new wine products, and product promotion. The recent increases in per capita consumption of raisins, fresh table grapes, and canned grape juice are likely to continue in view of plentiful supplies. With normal yields per acre, large crops of grapes are unavoidable, although future plantings will be substantially reduced.

The increased production of wine grapes that are best suited to the production of wine will replace some of the Thompson Seedless grapes crushed for wine. The Thompson is well suited to the production of raisins as well as use as a fresh table grape. This should mean that in addition to plentiful wine supplies, table grapes and raisins will also be plentiful in the years ahead.



